

REMARKS

This amendment is responsive to the Office Action of August 15, 2008. Reconsideration and allowance of **claims 3-11 and 13** are requested.

The Office Action

Figure 1 was objected to because the drawing contained unidentified blank boxes which need to be properly labeled.

Figure 3 was objected to because component 21 is shown, but it is not described in applicant's original disclosure.

The specification is objected to because the term "coil-like"

Claims 1-12 were rejected under 35 U.S.C. 112, second paragraph.

Claims 4-6 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite because a frame of reference was not set forth in the claims.

Claims 1-10 were rejected under 35 U.S.C. 102(b) as being anticipated by Englund et al. (U.S. Patent No. 5,197,474).

Claims 1-4, 7-9, and 11-12 were rejected under 35 U.S.C. 102(e) as being anticipated by Kroeckel (U.S. Patent Application Publication No. 2002/0138001).

Claims 1-7 and 11-12 were rejected under 35 U.S.C. 102(e) as being anticipated by Young (U.S. Patent No. 6,529,004).

The Present Application

The present application is directed to an RF system for a magnetic resonance imaging device that comprises a RF transmitter coil subsystem and a RF receiver coil subsystem. The RF receiver coil subsystem comprises at least one first coil element and at least one second coil element. The first coil element is movably attached to the main magnet of the magnetic resonance imaging device and the second coil element is assigned to an object that is to be analyzed by the magnetic resonance imaging device.

The present application provides the advantage of a higher signal to noise ratio because the parts of the RF receiver coil are positioned closer to the object to be analyzed.

The above description of the present application is presented to the Examiner as background information to assist the Examiner in understanding the application. The above description is not used to limit the claims in any way.

The References of Record

Englund et al. is directed to a mechanism for transporting a patient to a magnetic resonance unit. A coil seat is mounted on the upper surface of the lower bed and the lower bed is mounted for movement relative to the magnet. The coil is located on the lower bed outside of the magnet and the upper bed which is used to carry a patient and is moved relative to the lower bed such that the patient can be brought into the imaging area of the coil. There is no patient carried coil.

Kroeckel is directed to a magnetic resonance apparatus having a transmission coil for generating a radiofrequency field stationarily arranged. Additionally, a reception arrangement includes at least one first local coil and a second local coil. The first coil which is secured to the movable carrier and the second coil fixed at the patient support. There is no patient carried coil.

Young is directed to a magnetic resonance imaging apparatus that has a RF coil that is secured to the patient support so that it can travel axially with the patient support. Additionally, the coil is movable laterally to enable off-centre as well as central regions of the patient to be imaged. There is no patient carried coil.

Drawings

The drawings have been corrected to correctly label the unidentified blank boxes. Reference number 21, directed to the MRI device, has been added to the paragraph that starts at page 6, line 24.

Specification

The specification has been amended to replace the term "coil-like" with the term "coil".

35 U.S.C. 112

The claims have been amended to particularly point out and distinctly claims the subject matter which applicant regards as the invention.

**The Claims Distinguish Patentably
Over the References of Record**

Claims 1-12 are not anticipated by Englund et al., Kroeckel, or Young. These rejections are hereby traversed.

More specifically, regarding **claim 6**, Englund et al., Kroeckel, and Young do not disclose wherein the or each first coil element is positioned below, preferably directly below, a support or bed on which the object to be analyzed is placed and is movably attached to the main magnet system, in a way that the support or bed is movable relative to the or each first coil element and that the or each first coil element is movable relative to the main magnet system and wherein the or each second coil element is assigned to an object to be analyzed by the magnetic resonance imaging device. None of Englund et al., Kroeckel, and Young disclose a first coil element located below a support or bed that is movably attached to a main magnet system and is movable relative to the main magnet system.

The Examiner refers Applicant to Figure 1-4 and Col. 1 line 18 through col. 6 line 15 of Englund et al. which discloses a patient bed having a lower bed that is provided with coils positioned in a signal positioning point (Col. 4 lines 18-20). Additionally, Englund et al discloses that all the coils are mounted on the bed at the same location and there is just one positioning method which facilitates the operation of the apparatus (Col. 4 lines 56-58). Examiner also refers Applicant to paragraphs [0007]-[0035] of Kroeckel which discloses a magnetic resonance apparatus which has a reception arrangement comprising two reception coils; a first coil which is secured to a movable carrier and a second coil which is fixed at a patient support above the patient. Kroeckel discloses that both the first and second reception coils are attached to the movable carrier and patient support in fixed positions (Paragraphs [0025] and [0027]). Additionally, Examiner refers Applicant to col. 3 lines 13 through col. 5 line 20 of Young which discloses that a RF coil is secured to the patient support

and can travel axially with the patient support. Additionally, Young discloses that the RF coil can move laterally to enable off centered regions of a patient to be imaged.

Englund et al., Kroeckel, and Young do not disclose a first coil element that is movably attached to the main magnet system which allows the first coil element to move relative to the main magnet system. As shown in Figure 3 and described in the specification on page 6 lines 13-23, **Claim 6** refers to a first coil element that is able to move a distance relative to bed or support and the main magnet system when the bed and the second coil element are moved in order to optimize the image quality. Englund et al. and Kroeckel have first coil elements that are securely fixed in the patient bed or support and Young discloses a first coil element that is able to move laterally to enable off center imaging. Englund et al., Kroeckel, and Young do not teach a first coil element that is located beneath the bed or support and is movable attached to the main magnet system which allows the first coil element to move relative to the bed or support and the main magnet system.

Further, none of Englund, Kroeckel, and Young disclose a second coil assigned to the patent.

Accordingly it is submitted that independent **claim 6** and **claims 3-5 and 7-10** which depend therefrom distinguish patentably over the references of record.

Claim 11 calls for wherein the or each first coil element is movable attached to the main magnet system, in a way that the support or bed is movable relative to the or each first coil element and that the or each first coil element is movable relative to the bed or support and the main magnet system. Englund et al., Kroeckel, and Young not disclose a first coil element that is movable attached to the main magnet system and is moveable relative to the bed or support and the main magnet system.

Claim 11 also calls for the second coil element to be attached to the object. None of Englund, Kroeckel, or Young disclose a coil element affixed to the object.

Accordingly it is submitted that independent **claim 11** distinguishes patentably over the references of record.

Claim 13 calls for the first RF coil structure to be positioned below a support on which a subject to be analyzed is supported and is movably attached to the

and relative to the main magnet system. Englund et al., Kroeckel, and Young not disclose a first coil element that is positioned below the support or bed and is movable attached to the main magnet system and is longitudinally movable relative to the support and the main magnet system.

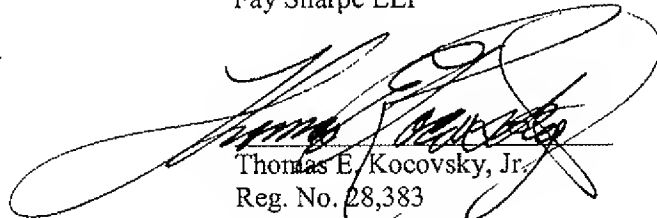
CONCLUSION

For the reasons set forth above, it is submitted that **claims 3-11 and 13** (all claims) distinguish patentably over the references of record and meet all statutory requirements. An early allowance of all claims is requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is requested to telephone Thomas Kocovsky at (216) 861-5582.

Respectfully submitted,

Fay Sharpe LLP

A large, stylized handwritten signature in black ink, likely belonging to Thomas E. Kocovsky, Jr., is written over the printed name and address.

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